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धात्विक फिल्टरों के लिए कांसा पाउडर – विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

BRONZE POWDER FOR METALLIC FILTERS — SPECIFICATION

(First Revision)

UDC 669·35'6-492·2

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

April 1993 **Price Group 1**

Powder Metallurgical Materials and Products Sectional Committee, MTD 25

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Powder Metallurgical Materials and Products Sectional Committee had been approved by the Metallurgical Engineering Division Council.

In the powder metallurgical industry bronze powder is used for the manufacture of metallic filters. The powder may be produced by several methods like atomization, solid state diffusion, electroless plating of copper by tin, etc. Physical properties of the powder vary depending on method of manufacture. However for manufacture of metallic filters, atomized powder is the most popular. The uniformity of shape (spherical) of atomized powder ensures uniformity of shape and size of pores in the sintered filter.

This standard was first published in 1981. In this revision following modifications have been made:

a) A new clause giving latest references has been incorporated,

b) Clause on grades based on particle size has been deleted, and

c) Requirements of packing, marking and test certificate have been added.

This standard contains clauses **6**, **7.2**, and **9** which call for agreement between the purchaser and the manufacturer.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

BRONZE POWDER FOR METALLIC FILTERS — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers the requirements of bronze powder for use in the manufacture of metallic filters.

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

For the purpose of this standard, definitions as given in IS 5432 :1982 shall apply.

4 SUPPLY OF MATERIAL

General requirements relating to the supply of bronze powder shall be as laid down in IS 1387 : 1967.

5 CHEMICAL COMPOSITION

Chemical composition of bronze powder shall be as given in Table 1.

Table 1 Chemical Composition of Bronze Powder

Constituents	Percent
Copper	Remainder
Tin	9.5-11·5
Iron, *Max*	1·0
Phosphorous, *Max*	0·5
Acid Insoluble, *Max*	0·2
Total other elements, *Max*	0·5
Hydrogen loss, *Max*	0·5

5.2 The chemical analysis of bronze powder shall be done by the methods specified in IS 4027 : 1967 or any other established instrumental/chemical method. However, in case of dispute the procedure specified in IS 4027 : 1967 or its relevant parts shall be the referee method.

5.3 The hydrogen loss shall be determined in accordance with IS 5644 (Part 2) : 1993.

5.4 The acid insoluble shall be determined in accordance with IS 7438 : 1985.

6 SIEVE ANALYSIS

The sieve analysis of the material shall be carried out in accordance with IS 5461 : 1984. The size distribution shall be mutually agreed upon between the purchaser and the manufacturer.

7 PHYSICAL PROPERTIES

7.1 Apparent Density

The apparent density of the powder when determined in accordance with IS 4848 : 1981 or IS 10441 : 1991 shall be not less than 4·0 g/cm^3.

7.2 Flow Rate

Flow rate shall be as agreed to between the purchaser and the manufacturer. It shall be determined in accordance with IS 4840 : 1984.

7.3 Particles Shape

Particle shape shall be spherical or near spherical.

8 SAMPLING

Sampling of powder for conducting various tests shall be done in accordance with 6492 : 1992.

9 PACKING

The powder shall be packed in suitable containers in quantity mutually agreed to between the purchaser and the manufacturer.

10 MARKING

10.1 Each container of the bronze powder shall be marked with the following information:

a) Bronze powder for metallic filters,
b) Batch number and/or date of manufacture of powder,
c) Net mass of powder in the container, and

d) Indication of the source of manufacture.

10.2 Standard Mark

Each container of the bronze powder may also be marked with the Standard Mark.

11 TEST CERTIFICATE

If required, a test certificate may be supplied with a consignment of bronze powder indicating details of batch number, chemical composition and physical properties.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
1387 : 1967	General requirements for the supply of metallurgical materials (*first revision*)
4027 : 1967	Methods of chemical analysis of bronzes
4840 : 1984	Method for determination of flow rate of metal powders for powder metallurgical purposes (*first revision*)
4848 : 1981	Method for determination of apparent density of free flowing powders for powder metallurgical purposes (*first revision*)
5432 : 1982	Glossary of terms relating to powder metallurgy (*first revision*)
5461 : 1984	Methods for sieve analysis of metal powders (*first revision*)
5644 (Part 2) : 1993	Metallic powders — Determination of oxygen content by reduction methods : Part 2 Loss of mass on hydrogen reduction (hydrogen loss)
6492 : 1972	Methods for sampling of metallurgical purposes
7438 : 1985	Methods of tests for acid-insoluble content in iron, coppor, tin and bronz powders (*second revision*)
10441 : 1991	Metallic powders — Determination of apparent density — Oscillating funnel method (*first revision*)

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